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10/018,686	03/25/2002	Seiji Onishi	2001-1823A	7787

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EXAMINER

BATTAGLIA, MICHAEL V

ART UNIT PAPER NUMBER

2652

DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/018,686

Applicant(s)

ONISHI ET AL.

Examiner

Michael V Battaglia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 04182002.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Drawings*

2. Figure 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).
3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the back foci f1 and f2 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes

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are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3 and 5 and therefore claims 2-4 and 6-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In lines 14-20 of claim 1, "the synthesizing means is made close to the converging means, so as to drastically change imaging magnification" is indefinite because it is a relative statement that is not relative to anything. Thus, it is unclear how close the synthesizing means has to be made to the converging means and unclear from what the imaging magnification is drastically changed. Due to the vagueness of the claim, lines 14-20 will not be considered in the prior art rejections below.

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In regard to claim 3, the invention is not distinctly claimed because it is impossible for an optical pickup device to meet every claim limitation. Claim 2, on which claim 3 is dependent, claims that the converting means converts light from the synthesizing means into parallel light. Claim 3 specifies that the first and second light sources are not at respective back foci of the converting means. As a result, the light output from the converting means cannot be parallel and will at least be slightly divergent or slightly convergent. Therefore, "parallel" in line 3 of claim 2 will be interpreted as -substantially parallel- or -almost parallel- for the prior art rejections below.

Claim 5 is indefinite because the term "high" is a relative term and it is unclear how high the refractive index of the material of the light path length converting means must be to satisfy the claim limitation. The specification only states that the light path length converting means may employ a material having a high refractive index for internal reflection (Page 18, lines 6-8 and Page 22, lines 15-18). The examiner will interpret a light path length converting means with internal reflection as meeting the claim limitation in the prior art rejections below.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 4, 7 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Sakai et al (hereafter Sakai) (US 6,388,977).

In regard to claim 1, Sakai discloses an optical pickup device comprising: a first light source (Fig. 10, element 50) for emitting a light beam with arbitrary wavelength; a second light source (Fig. 10, element 70) for emitting a light beam with wavelength different from that of the first light source; a synthesizing means (Fig. 10, element 20) for making an optical axis of the light beam emitted from the first light source coincide with an optical axis of the light beam emitted from the second light source; a converging means (Fig. 10, element 4) for converging the light beam outputted from the synthesizing means onto an optical disk; and a detecting means (Col. 10, lines 26 and 41-42 and Col. 11, lines 34-37) for receiving the light beam reflected on the optical disk. It is noted that the synthesizing means is made close to the converging means by a light path length converting means (Fig. 10, element 3).

In regard to claim 2, Sakai discloses a converting means (Fig. 10, element 2) for converting the light beam outputted from the synthesizing means into parallel lights.

In regard to claim 4, Sakai discloses a light path length converting means (Fig. 10, element 3) for lengthening light path length of a light is provided between the synthesizing means and the converging means.

In regard to claim 7, Sakai discloses an aperture diaphragm for moving with the converging means and converging a light beam spot of desired size onto the optical disks (Fig. 10, element 8).

In regard to claim 10, Sakai discloses that when wavelength of the light beam emitted from the first light source is made  $\lambda_1$ , and wavelength of the light beam emitted

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from the second light source is made  $\lambda_2$ ,  $760 \leq \lambda_1 \leq 810$  nm,  $620 \leq \lambda_2 \leq 680$  nm (Col. 10, lines 5-8).

8. Claims 1, 2 and 4-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Maruyama (US 6,344,935).

In regard to claim 1, Maruyama discloses an optical pickup device comprising: a first light source (Figs. 1 and 2, element 12) for emitting a light beam with arbitrary wavelength; a second light source (Figs. 1 and 2, element 11) for emitting a light beam with wavelength different from that of the first light source; a synthesizing means (Figs. 1 and 2, element 13) for making an optical axis of the light beam emitted from the first light source coincide with an optical axis of the light beam emitted from the second light source; a converging means (Figs. 1 and 2, element 30) for converging the light beam outputted from the synthesizing means onto an optical disk (Fig. 1, element DVD and Fig. 2, element CD); and a detecting means (Figs. 1 and 2, elements 44 and 46) for receiving the light beam reflected on the optical disk. It is noted that the synthesizing means is made close to the converging means by a light path length converting means (Figs. 1 and 2, element 20).

In regard to claim 2, Maruyama discloses a converting means (Figs. 1 and 2, element 14) for converting the light beam outputted from the synthesizing means into parallel lights.

In regard to claim 4, Maruyama discloses a light path length converting means (Figs. 1 and 2, element 20) for lengthening light path length of a light is provided between the synthesizing means and the converging means.

In regard to claim 5, Maruyama discloses that the light path length converting means is made of material having high refractive index (Figs. 1 and 2, element 20). The

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large angle of refraction of the light as it enters the light path length converting means from the synthesizing means is interpreted as being indicative of a material having high refractive index.

In regard to claim 6, element 11 of Figs. 1 and 2 of Maruyama is interpreted as the first light source and element 12 of Figs. 1 and 2 of Maruyama is interpreted as the second light source. Maruyama discloses an when imaging magnification that is accomplished by an optical element between the first light source and the optical disk is made M1 and imaging magnification that is accomplished by an optical element between the second light source and the optical disk is made M2,  $1.5 \leq M2/M1$  (Col. 9, lines 57-58).

In regard to claim 7, Maruyama discloses an aperture diaphragm for moving with the converging means and converging a light beam spot of desired size onto the optical disks (Figs. 1-3A, elements 31 and 32 and Col. 5, lines 36-47). An aperture diaphragm is interpreted as a fixed or variable opening used to restrict the amount of light traversing a lens or optical system. The opening is interpreted as the central region (Figs. 1-3A, element 31) or the central region and the peripheral region (Figs. 1-3A, element 32) depending upon the wavelength of the light being used. The aperture diaphragm of Muruyama is attached to the converging means and therefore moves with the converging means.

In regard to claim 8, Maruyama discloses that when imaging magnification of the converging means with respect to the first light source is made m1, the following conditional expression is satisfied:  $|m1| \leq 0.068$  (Col. 9, line 58).

In regard to claim 9, Maruyama discloses that when numerical aperture on the side of the optical disk corresponding to the combination of the first light source and the optical



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disk is made NA1, and numerical aperture on the side of the optical disk corresponding to the combination of the second and the optical disk is made NA2, and when the imaging magnification of the converging means with respect to the first light source is made m1, and imaging magnification of the converging means with respect to the second light source is made m2, the following conditional expressions are satisfied:  $NA1 < NA2$  (Col. 5, lines 39-47),  $|m2| \leq |m1|$  (Col. 9, lines 57-58).

In regard to claim 10, Maruyama discloses that when wavelength of the light beam emitted from the first light source is made  $\lambda 1$ , and wavelength of the light beam emitted from the second light source is made  $\lambda 2$ ,  $760 \leq \lambda 1 \leq 810$  nm,  $620 \leq \lambda 2 \leq 680$  nm (Col. 6, lines 45-47).

In regard to claim 11, Maruyama discloses that the light beams as divergent lights emitted from the first and second light sources are incident on the synthesizing means, thereby scattering a reflected light on the surface of the synthesizing means (Figs. 1 and 2).

#### *Citation of Relevant Prior Art*

9. Koyama (US 5,546,373) discloses a that a light path length converting means (Fig. 4, element 15) for lengthening light path length of a light is provided between a synthesizing means and a converging means allows an optical system to be compact (Col. 2). Hayashi et al (US 5,703,856) (Figs. 7, 8 and 11), Mizuno (US 6,084,845) (Figs. 3, 4 and 11-14), Hong et al (US 6,353,587) (Fig. 11), and Muramatsu (US 6,067,283) (Fig. 7) disclose an optical pickup device comprising: a first light source for emitting a light beam with arbitrary wavelength; a second light source for emitting a light beam with wavelength different from that of the first light source; a synthesizing means for making an optical axis of the light

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beam emitted from the first light source coincide with an optical axis of the light beam emitted from the second light source; a converging means for converging the light beam outputted from the synthesizing means onto an optical disk; a detecting means for receiving the light beam reflected on the optical disk; a converting means for converting the light beam outputted from the synthesizing means into parallel lights; and a light path length converting means for lengthening light path length of a light is provided between the synthesizing means and the converging means. Lee et al (US 6,359,845) teaches positioning an emission point for a cd light closer to a collimator than the back focus of the collimator and teaches that when a laser is positioned closer to the collimator than the back focus, the beam from the collimator will be slightly divergent (Fig. 9 and Col. 6).

***Allowable Subject Matter***

10. Claim 3 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. None of the references of record alone or in combination disclose or suggest an optical pickup device comprising: a first light source for emitting a light beam with arbitrary wavelength; a second light source for emitting a light beam with wavelength different from that of the first light source; a synthesizing means for making an optical axis of the light beam emitted from the first light source coincide with an optical axis of the light beam emitted from the second light source; a converging means for converging the light beam outputted from the synthesizing means onto an optical disk; a detecting means for receiving the light beam reflected on the optical disk; and a **converting means for converting the light beam outputted from the synthesizing**

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**means into substantially parallel lights;** wherein when a back focus of the converting means for the wavelength of the first light source is  $f_1$  and a back focus of the converting means for the wavelength of the second light source is  $f_2$ , **the first light source is located at a position nearer to the converting means than  $f_1$  is, while the second light source is located at a position farther from the converting means than  $f_2$  is.**

### *Conclusion*

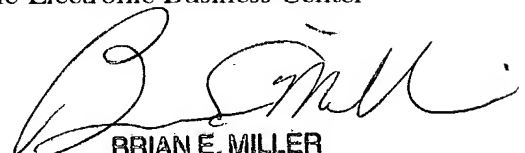
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V Battaglia whose telephone number is (703) 305-4534. The examiner can normally be reached on 5-4/9 Plan with 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael Battaglia



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PRIMARY EXAMINER